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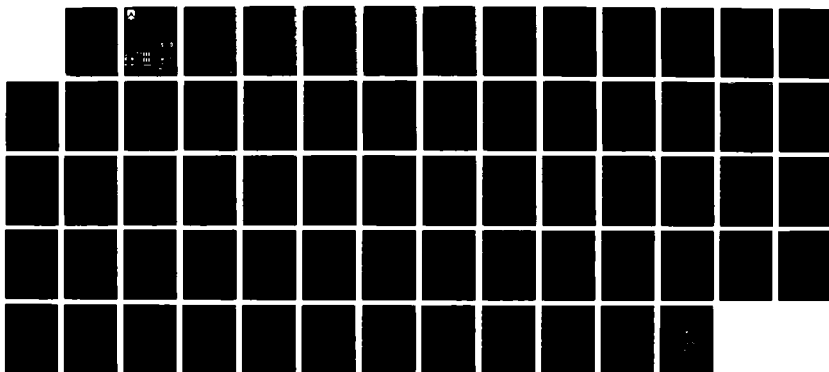
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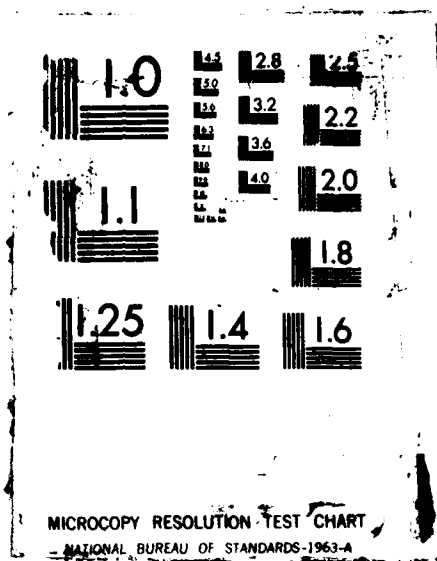
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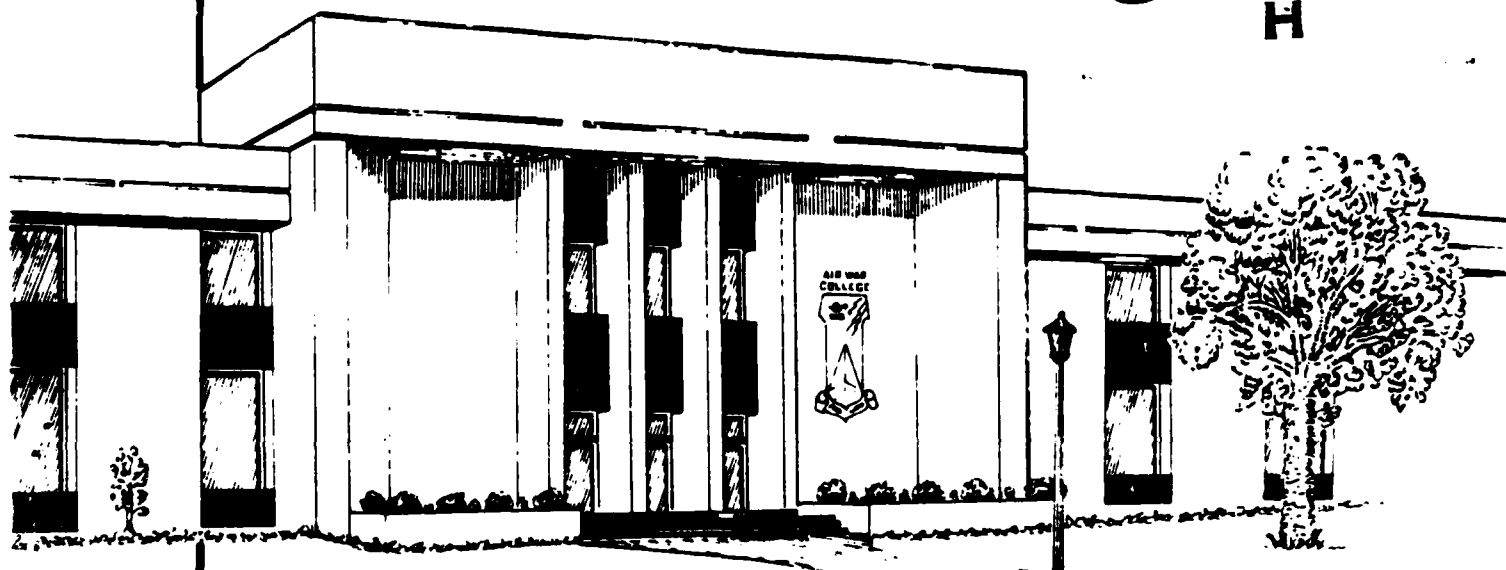
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REFORM AND THE AIR FORCE MILITARY CONSTRUCTION PROGRAM

By COLONEL DONALD J. THOMAS

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UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA**

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REFORM AND THE AIR FORCE MILITARY CONSTRUCTION PROGRAM

by

Donald J. Thomas
Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE RESEARCH
REQUIREMENT

Thesis Advisor: Dr Elizabeth Pickering

MAXWELL AIR FORCE BASE, ALABAMA

May 1987

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AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: Reform and the Air Force Military Construction Program

AUTHOR: Donald J. Thomas, Colonel, USAF

>The military construction acquisition system is in need of major change. Reduced manpower and project funding levels, as well as the need to restore public confidence in military management, requires a thorough review of the facility acquisition process. This paper reviews the weaknesses of the present facility acquisition process from the user's identification of a requirement to the construction of a facility. Recommended changes include assigning Major Commands as the focal point for programming and execution of the Military Construction Program, standardized designs, a computer data base of contractor and product performances, an emphasis on individual responsibility, and the need to consolidate and simplify public laws dealing with facility construction.

BIOGRAPHICAL SKETCH

Colonel Don Thomas has served in the Civil Engineering career field throughout his twenty-one year Air Force career. He has worked in many areas of construction and programming from project design at base level to Program Requirements and Development at major command headquarters and management of overseas construction as as an Air Staff Action Officer. He graduated from the Newport News Shipyard Apprentice School as a Senior Designer and the University of Virginia with a degree in Architectural Design. He also was selected by the Air Force to attend the University of Alabama where he received a Masters Degree in Management Science and Operations Management. Colonel Thomas is a graduate of the Air War College, class of 1987.

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CHAPTER I

INTRODUCTION

The President, the military, and ,in particular, the Air Force have received a great deal of criticism for what the newspapers characterize as waste and mismanagement. From the procurement of hammers to the development and production of the B-1B bomber, the military has been portrayed as either being inept or of covering-up procurement failures to protect their positions. As a result, the President formed a Blue Ribbon Commission on Defense Management:

...in part because public confidence in the effectiveness of the defense acquisition system has been shaken by a spate of "horror stories"--overpriced spare parts, test deficiencies, and cost and schedule overruns. [1:1]

Many in the military feel this indictment is blown out of proportion. Yet, if you ask many of these same people what they think of the acquisition system which takes months to buy a carpet for their offices, they are quick to denounce "the system."

The system used to buy new facilities for the Air Force is likely to draw similar negative comments from those in the military. Slow response and poor workmanship are but two of the problems users face. The system which takes months to buy a carpet takes years to build a facility. Even the most understanding commander is frustrated by the red tape and stumbling blocks the system puts between him

and the new facility he needs to do his job. What is even more damning is that the very people who are charged with operating the system--the engineers, contracting officers, and contractors--are at least as frustrated with the mounds of paper work and seemingly illogical procedures they must follow.

The need for reform is obvious to anyone who is involved with facility acquisition. This reform must address generic problems and not just symptoms of the problem. More rules, regulations, and laws are not needed. This has been the solution in the past and it has not worked. What is needed is a hard look at the facility acquisition system from beginning to end (including mandated procedures.)

The purpose of this paper is to identify problems in the Air Force facilities acquisition system and to offer recommendations for its improvement. The objective of these recommendations is to make the Air Force construction system simpler, more responsive, and more cost effective. Many of the recommendations for improvement are based on the findings of the special Task Force on Defense Acquisition which was formed from the President's Blue Ribbon Commission on Defense Management. Although the Task Force concentrated on the acquisition of major weapons systems, a great many of the problems which it identified, as well as the solutions recommended, are applicable to facility acquisition.

The first step in improving the present facility acquisition system is to understand how the system works and to identify some of the more glaring problems. For purposes of this study, the facility acquisition process is divided into three phases: planning, programming, and execution. The second step in the study is to recommend changes in each of these phases which will reduce many of the existing weaknesses. Following will be a summary of the recommendations and their anticipated impact on facility acquisition.

CHAPTER II

FACILITY ACQUISITION IN THE U.S. AIR FORCE:

HOW IT'S DONE TODAY

An understanding of the existing facility acquisition system and some of its problems is necessary before looking at ways to improve it. For those who are not familiar with the system, it will quickly become clear that it is complex and difficult to assign responsibility for failure or credit for success. This inability to assess responsibility is one of the basic weaknesses of the present system.

For purposes of discussion and clarification of later analogies between military construction and weapons systems acquisition, the construction acquisition system can be broken down into three main phases: planning, programming, and execution. Appendix 1 on page 48 shows the steps and time phasing of these three phases of the Military Construction Program.

The Planning Phase:

The first step in the planning phase of facility acquisition is to identify requirements. Facility requirements can be identified in a number of ways: by the user who wants an improved place to work or live; by direction of higher headquarters to add, decrease, or change a mission; or by a policy change which causes a realignment of functions. The higher headquarters directed and mission

change facility projects are tied to weapon systems approval or to the mission change and do not compete with other projects. That is, if a new weapon system is approved, the facilities needed to support the weapon system is approved at the same time. The same is true for a mission change. For this reason, only the first case, user identified requirements, will be discussed in this paper.

A user generated requirement is defined as one which originates at base level, usually by a unit commander or one of his staff. Requirements are submitted throughout the year from the user through his supervisor to the Base Civil Engineering Customer Service Section. These requirements are reviewed by the base Chief of Resources and Requirements to determine if all "required" information has been provided. The responsibility of the Chief of Resources and Requirements is mainly to log the facility request in his records and to determine if the work can be done by in-house forces. Once he determines the work can not be built with in-house forces, he passes responsibility for the project to the next office in the Civil Engineering organization which will work the project through the authorization steps in the approval process.

It is not uncommon for the request to be returned several times for additional information or justification because the user is not familiar with the information required. Air Force regulations require the user to submit

a request with a sketch showing the proposed floor plan and the justification to be used to support the project through the gamut of reviews on the way to Congressional authorization and appropriation. The individual who programs the information is probably doing so for the first and perhaps last time in his career. He more than likely will never get to see the results of his efforts and will not likely be held responsible for any mistakes he makes nor will he be rewarded for the effort he makes.

The requirements are reviewed to see if they meet or exceed the myriad of regulations which range from the number of square feet allowable in the proposed facility to the evermore complex environmental laws. Once the facility size is determined, a rough cost estimate is computed, and the requirement is held until approximately June when the base programming cycle begins.

The user often becomes frustrated with the civil engineering organization (the messenger) and the civil engineering organization frustrated with the user. The user can not understand why the limitations on size or scope have been set and feel the engineers do not understand his problems. They only want to know how to get what they want not why they can't.

The engineers, on the other hand, often do not know why restrictions have been set and don't understand why the user can't understand and live within the guidelines. All

they want from the user is a clear description of what he wants with a justification which could sell the requirement to the major command (MAJCOM), the Air Staff, the Office of the Secretary of Defense (OSD) and the Congress. In some cases, the system fosters a "we/they" relationship instead of a team effort.

In the formulation of a requirement, the system places responsibilities on the user which may be beyond his capability, does not assign responsibility, and often results in an adversarial relationship. In the next phase of facility acquisition, the programming phase, it will become more obvious why some of these problems occur.

The Programming Phase:

Unlike the Planning Phase which is relatively simple, the Programming Phase is exceedingly complex and time consuming. In most cases, the requirements phase begins with the base Facilities Working Group (FWG). The membership of this group includes the deputy commanders of the larger organizations on base, usually a representative of the tenant units, and the Chief of Engineering and Environmental Planning. The FWG validates and prioritizes all facility requests. In addition, the FWG determines if other facility requirements should be considered and develops a strawman five year facility plan which is known as the base Long Range Plan.

The primary purpose of the FWG is to relieve the base's top level management of the burden of reviewing all facility requests and narrowing them down to the most important ones. A "strawman" (proposed) priority list is prepared by the Civil Engineering Chief of Programs as a starting point for discussion. It is usually a "get down in the dirt and roll up your sleeves" meeting which can take a great deal of time. This is especially true if there are a large number of requests and strongly held parochial views as to which requirements should be given the higher priority. Meetings are often rushed and participants may not be well informed on the pending projects because of the many other time demands on the individuals involved. Much of the ground work needed to understand project requirements are delegated to junior officers or NCOs who usually backup the FWG members at meetings. The system again becomes a we/they scenario (Civil Engineers trying to explain requirements) except there are more "theys" involved now.

The first problem the FWG often faces is to separate needs from wants and to agree on which facilities are most needed by the base. The Air Staff sends a construction budget estimate or dollar "bogey" to the major command (MAJCOM) which highlights the amount of money the command can expect each year for the next five years. In turn, the MAJCOM further divides the bogey and sends it to the bases within their commands. The FWG develops a draft five year

facility construction plan from the requirements priority list using the bogey limitation. (One of the definitions of "bogey" in Webster's Dictionary is ...a source of fear, perplexity, or harassment. This accurately describes the "bogeys" of facility planning, since they are changed so often by higher authorities that very few have faith in projected dollar amounts.)

How the bogey is divided at MAJCOM is open to question. Some commands have used models to divide the bogey predicated on number of squadrons assigned to the base or the proportion of square feet on a base relative to the total square feet in the MAJCOM. Few commands have split the bogey based on any stricter definition of need.

In any case, when the FWG completes its draft five-year plan, it is submitted to the Wing Facilities Utilization Board (FUB). The FUB membership is made up of the senior base managers including the wing commander, group commander, director of operations, chief of maintenance, resource manager, communications squadron commander, the squadron commander of any major tenant, and the base civil engineer. During periods of increased construction funding, such as existed between 1980 and 1984, the FUB made only minor adjustments to the proposed five year plan. This was true because most vital facilities requirements would be funded within the expected bogey. This is no longer the case.

To implement a more realistic approach to prioritizing projects, criteria need to be developed which weigh the need of one base against another for similar facilities. For example, TAC used the number of eligible airmen forced to live off base due to the lack of dormitory space as one of the criterion to determine which base was to receive priority for dormitory construction.

Such a system would not take away the prerogative of the wing commander to decide what is most important for his base. What this system would do is to require the MAJCOM to decide which projects are most important to meet the objectives of the command as a whole. Who is more qualified to make this decision than the people who have the opportunity to compare conditions at all bases?

Accompanying the authority and responsibility of setting priorities is the responsibility for the MAJCOMs to stand up and explain their decisions and to allow for discussion and dissent. When discussion is over, only the list of priorities should be sent to the Air Staff--not the full documentation. The full documentation should stay at the MAJCOM and they should be held responsible for its validity. The MAJCOM's rationale for the priority listing should accompany the listings and explain how the listing reflects the objectives set by the Air Staff or higher authority.

Moving to a higher command level, the Air Staff should have the responsibility of setting objectives and

change of commanders by requiring five year plans to be published with the rationale for the choices made. This system has helped to add stability in the base long range plan and still leaves room for new commanders to correct for changing conditions rather than taking a total new direction in order to put their own "imprint" on base facilities. There is still more to be done to institutionalize the long range plan.

In December, most major commands ask their bases for the draft facility programming documents which will be included in the budget submittal still two years away. Copies of the facility programming documents are sent to the MAJCOM agency corresponding to the project user for review and comment. For example, a project for a new maintenance facility is sent to the office of the Deputy Chief of Staff for Logistics who recommends either support for the project or, in a few rare instances, disapproval. He could also recommend changes in siting from one part of the base to another, facility floor plans, or size based on information available at MAJCOM which is not available at wing or base level.

Later, in January or February, the programming division in at least one of the MAJCOMS (Tactical Air Command), spends one day with each of their bases reviewing their five year facility program with the emphasis on reviewing the draft facility programming documents.

Corrections and recommendations are made, and the information is used to update and improve the documents. The MAJCOM philosophy is that the program is a base program which must be defended by each base with the MAJCOM staff available to assist.

After each base has submitted their corrected documents, a MAJCOM draft priority listing called a "strawman" is developed for the next fiscal year. The strawman integrates the priorities of all the bases. Projects compete for priority in this strawman in a number of different categories. For example, all beddown projects for a particular weapons system such as F-16s or B-1s have separate programs and do not compete against each other. Special programs such as control towers and medical construction are separate and also do not compete. With few other exceptions, the remaining projects all compete in a category called "base operating support" (BOS). The BOS strawman priority listing for these projects is developed in the following manner:

1. Top priority goes to those projects which were approved for the previous year but for some reason (not disapproved by Congress with prejudice) did not get to or through the Congress.

2. Second priority goes to projects directed by the MAJCOM commander. These are usually only a few projects and even these are usually the ones the bases already have at the top of their priority list.

3. The number one priority of all bases are put on the list then the second, third, and so forth.

The list is reviewed for "balance" (a reasonable proportion of mission support and quality of life projects) and to insure all the "must have" projects are within the command bogey. This strawman priority listing is reviewed, discussed, and recommended changes in priority are made to the MAJCOM commander for his approval. A copy of the strawman is usually provided to the Air Staff Civil Engineers for information.

In May, the bases submit their final project documents to the MAJCOMs for final review and correction of "technical errors." In June the MAJCOM's submit the final programming documents to the Air Staff Civil Engineer. Just as the MAJCOM's did, the Air Staff Engineers send copies of the programming documents to the counterpart of the project user on the Air Staff. In July or August, the MAJCOMs spend a half a day presenting to the Air Staff a detailed briefing on each project included in the command program, answering any questions about the program. The presentation includes 35mm color slides which show why the project is needed. Much of this information is collected in anticipation of a

flood of congressional questions. If a facility project is "validated" (approved by the Air Staff) a directive is issued which authorizes the project to be designed. The significance of the "design directive" will be discussed further in the execution phase of the facility acquisition system.

The Air Staff also holds a board review of the MAJCOM program; however, the Air Staff does not prepare an Air Staff/Air Force priority project listing, just as DoD does not prepare a DoD priority listing. The basis for not prioritizing the projects is that each must stand on its own merit and not on an emphasis given by the MAJCOM or Air Staff. Such a system forces Congress to disapprove by project instead of just reducing a certain percentage of the projects submitted.

Both the Air Staff and DoD are more concerned with budget bogeys than with individual projects. When the President's budget begins to take shape and previous bogeys are reduced, the bad news is passed back to the MAJCOM to select projects to be deleted. At this point, reduced bogeys are passed through the system, and projects on the bottom of the MAJCOM priority list are slipped to future years.

The Air Staff becomes interested in individual projects after the President's budget is submitted to the Congress and the Congressional committee hearings begin some

time in April. At this point, DoD, to some degree, the Air Staff and, in particular, the Air Staff Civil Engineer begin to answer the detailed questions of a wide variety of Congressional committees. The Air Staff Engineer has spent months preparing to answer such questions, which often require a great deal of research, many of the same questions being asked year after year. The answer given to such a question as "why does it cost \$5.00 more per square foot to build a 150 man dormitory in Miami than it does in north Florida" could cause a valid project to be disapproved. The cost estimates are often attacked as if they were the final cost rather than a sophisticated guess at what the contractors will bid if the project is approved. In any case, the detail is far beyond that which the Congress should be concerned with.

At the very least, four committees review each project--the Senate and House Appropriations committees and the Senate and House Authorization committees. If any of these committees disagree on cost or validity of a specific project, the project will meet a conference committee composed of members from the House and Senate authorization committees or their counterparts on the appropriation committees, who work out a compromise. This compromise sometimes approves a project at the same scope (size), but reduces the amount of dollars approved to do the project. Such an approval almost always causes problems in the

Execution Phase (design and construction) of the facility project. Conversely, good programming helps to insure the third and final phase of facility acquisition, the Execution Phase, is completed on time and within allowable cost.

The Execution Phase:

The execution phase of facility acquisition begins before the programming phase is complete. It starts with the design directive. Although many consider design to be part of the programming phase of facility acquisition, it is really a major leap forward in the realization of a facility and ,for the purposes of this paper, is considered to be part of the execution phase of the facility construction process.

The design directive is issued when the Air Staff validates a project. It authorizes the "design agent" to design a project for the Air Force at a specified fee. In 95 percent or more of the cases, the design agent is the Army Corps of Engineers, but in a few cases, is the Navy Facilities Command. By Public Law, the Army and Navy have been designated as the design agents for the Air Force except where the projects are Air Force unique facilities for which the Army or Navy do not have the necessary expertise. These occasions are, however, rare.

The design agents are paid six percent of the project cost to manage the design and construction of a project. Because the higher the project cost, the higher

the fee the design agent receives, there is little incentive for the design agent to keep costs as low as possible. There is also no incentive for quality control because the design agents do not have any competition for the work.

At this point another player, the Air Force Regional Civil Engineer (AFRCE) , becomes part of the process. The purpose of this organization is to act as the Air Force's single point of contact with the design agent.

The MAJCOMs are also involved in the execution process as the design interface between their bases and the Regional Civil Engineers. Since many of the MAJCOMs have bases throughout the United States, they have to work through more than one and possibly all three AFRCE's.

The design agent has the choice of either designing a facility with his own engineering work force or hiring and monitoring an architectural engineering firm to do the design. Although there is usually a separate section for Air Force facility projects, the Corps of Engineers is also responsible for designing Army projects which compete for limited engineering, construction acquisition and management time. In most cases, the Air Force project designs are accomplished by an architectural firm.

Reviews are made at various stages in the design process to insure that what is being designed is what is wanted and to resolve problems such as design cost estimates in excess of programmed cost estimates. As with the case of

the design agent, the architectural firms are paid six percent of the estimated price of the project. Again, there is little incentive to keep costs as low as possible. In addition, the architect is paid a percentage of the estimated cost, not the low bid price on the contract. Copies of the drawings are sent to the base, the MAJCOM, and the AFRCF for review. At the base, the designs are reviewed by the user, the engineers, the fire department, safety, the environmental engineer, and on occasion, the bio-environmental engineer.

According to "regulations", the base can only make "functional" comments, that is, comments pertaining to facility floor plans and appearance. Technical comments are discouraged because this is the design agents responsibility (what they are being paid to do.) When the base does find other problems, such as inappropriate heating or air-conditioning systems for that location, the use of building materials not readily available in the local area, or even mistakes in design calculations, these comments are also included in the review. The review comments are forwarded to the MAJCOM engineering directorate, which also does a functional review of the drawings. Their comments are consolidated with the base's comments and forwarded to the project manager at the AFRCF who meets with the Corps of Engineers and the architect to discuss the comments.

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The completed drawings are sent to the base for signature by the organizations who participated in the design review plus the base commander, who is technically responsible for all base facilities. At this point the programming and execution phases converge as the projects must be 75 percent design complete before the projects are submitted to the Congress for authorization and funding. This requirement is directed in public law to help insure accuracy of the cost estimates. This is one of the reasons projects may slip to a later year. If a design is not 75 percent complete when it is time to submit the project to OSD, the project is not included in the President's budget.

Usually, the design agent is also the contracting and construction agent for the Air Force. The contracting section prepares the paperwork for project acquisition which must be reviewed by their legal section. After the legal review has been completed, the procurement section publishes a notice in the Commerce Business Daily newspaper describing the project to be built and the approximate cost. The notice must be published 30 days prior to the date copies of the designs and specifications are sent out to bidders.

Interested construction companies who reply to the newspaper notice are sent copies of the contract drawings and specifications on which they must base their bids. They are also given the date the sealed bids must be submitted and the date the bids are to be opened. Once the bids are

opened, they are arranged in descending order of cost and the low bidder is given the opportunity to verify that his bid is correct. If there is an error, the next low bidder is asked to verify his bid and so on until the low bidder verifies his bid is correct. At this point the contracting office audits various aspects of the bid and certifies award of the contract.

A short time after the contract is awarded, a preconstruction conference is held at which time the safety and fire rules are explained to the contractor as well as to answer any questions he may have. The contracting section gives the contractor a "notice to proceed" which is usually within 30 days of the contract award. This period gives the contractor time to hire a work force and begin to plan the construction as well as to begin ordering the necessary materials.

The contract specifications include a specific period allowed for construction. Construction extensions may be given if there are unusually bad weather conditions, unforeseen site conditions, or other unforeseen circumstances such as labor disputes or difficulties in obtaining supplies which delay the contractor and are beyond his control.

The construction agent, through his contracting section, is responsible for insuring the contractor builds the facility in accordance with the designs and acts as the

Air Force representative throughout the period of construction. The construction agent assigns an on-site inspector for this purpose. The base engineering organization assigns a project monitor who visits the site almost daily during construction to represent the base's interest through the construction agent's inspector. The project monitor works with the inspector on changes which may be required during construction. These changes could arise because of unforeseen site conditions or a user request for changes to the design.

When the contractor is ready for a prefinal completion inspection, the design agent, the facility user, the fire department, safety, and the base civil engineering project monitor inspect the facility and write what is called a "punch list." A punch list is a list of unfinished or inappropriately finished items which the contractor still has to complete. A final inspection is made when the project has been completed. The facility is usually turned over to the user at the end of this inspection if there are no significant problems remaining.

From the time the user requested the facility to the time the facility is turned over to the user usually takes from four to five years--a long time with the proponents changing several times during the process.

CHAPTER III

RECOMMENDATIONS FOR IMPROVEMENT:

HOW IT SHOULD BE DONE TOMORROW

Chapter II described the facility acquisition process and many of the problems inherent in the system. This chapter will recommend solutions to some of these problems. Many of these solutions are inspired by the Packard Commission's recommendations for weapons system acquisition improvement. Other solutions are the result of the author's twenty-one years of living and working with the facility acquisition system. Appendix II on page 49 shows the proposed steps and phasing of the Military Construction Program acquisition process.

There is a common thread to many of the facility acquisition system problems. The system tries to tell those who are charged to administer the system both what to do and how to do it. If a mistake occurred in the past, the solution was more instructions on how to administer the system. The result is a system which stifles initiative and rewards conservative solutions. Similar problems in management situations have not gone unrecognized by Air Force leaders.

...productivity is not driven so much by the quality of management decisions--important as those may be--as by the quality of the execution. I am totally convinced... that we not only get more productivity from decentralizing responsibility and authority, but we also get smarter decisions from the commander or supervisor on the scene. [7:44-45]

This quote by General Larry D. Welch, Chief of Staff of the U.S. Air Force, is only one of many made by present and recent past leaders of the Air Force who advocate "centralized control and decentralized execution." Lessons learned from political/military failures in Vietnam, the Mayaguez incident, and the attempted hostage rescue in Iran contrasts with the British success in the Falkland campaign which employed decentralized execution. The following recommended improvements to the facility acquisition system are based on this overriding guideline: maintain centralized control, but delegate authority and responsibility down to the lowest possible level. As in Chapter II, the facility acquisition system will be divided into three phases to discuss recommended improvements: planning, programming, and execution.

The New Planning Phase:

Any good system should begin with a statement of objectives and their priorities. From these prioritized objectives, a listing of requirements can be developed. By knowing the priority of the objectives, the requirements can also be easily prioritized.

A clear statement of Air Force objectives tied to the facility acquisition system is missing. Once it is stated it would be a relatively easy matter to determine dollar cost for these objectives and establish a budget bogey. This would be a simple and effective plan to meet

objectives. There should be no wasted effort, no adversarial relationships, and the product would be available in the shortest possible time at the least cost. The challenge is how to execute such a plan while maintaining control at the appropriate level.

The broad statement of objectives could begin at the Air Staff, OSD, or even higher. For example, an article in a recent Air Force Times quoted Representative W.G. Hefner, Chairman of the House Appropriations Subcommittee on Military Construction, as saying :

It was this committee that last year saw to it child care centers, family housing, and schools were funded, not the leaders in the Pentagon. We would like to see some priorities set around here, and we want you to take the message back to your leaders.[8:42]

Gramm-Rudman will insure the construction budget bogey will not grow significantly in the foreseeable future. Planning and facility decisions (control) must be set to match Air Force objectives and dollars assigned accordingly. The first step again is, **what are the objectives?** If an objective is to provide adequate child care centers for eligible dependents, then a facility plan can be devised to accomplish that requirement in two, three, or in what ever number of years is specified. If there is an objective to replace all wooden world war II facilities before 1995, then such a requirement could be accomplished. These objectives must be prioritized and funds dedicated to meet these priorities.

The delegation of responsibility down to the wing commander, because he is closest to the problem, does not abrogate the responsibility of MAJCOM and the Air Staff of their responsibility for control. Yes, the wing commander should determine which of the wooden WW II facilities has the most negative impact on his mission, but that is execution of the requirement, not a statement of objective. The Wing Commander should continue to develop his five year wing plan, but it should be based on policy from above. A good example of where facility construction does not always support Air Force policy is design criteria.

It is Air Force policy to deemphasize alcohol, yet bars are built in pilot lounges of all squadron operation buildings for squadron parties. The fact that bars are built only in squadron operations facilities is a statement to both pilots and non-pilots that alcohol deglamorization does not really apply to all segments of the Air Force equally. A second interpretation could be that the Air Force is not really serious about its alcohol deglamorization program.

In addition, there is no criteria (or the criteria is unclear) concerning the need for an exercise room in a squadron operations building. Some are being built. What is the objective? If the objective is better fitness, why will fitness levels improve if there is already a gym on base with adequate exercise facilities? What other facility

is not being built because funds are being spent on such items? One of the true tests of a requirement often heard in the Air Force is that not only should something not be illegal it should not appear to be illegal. A more appropriate test than legality might be whether or not the decision qualifies the decision maker for Senator Proxmire's "Golden Fleece" award. **The appearance of waste is almost as bad as actually being wasteful.**

The wing commander is closest to base problems and is the individual who, as he develops his five year plan ensure that it will execute higher headquarter's objectives and policies. The base five year facility acquisition plan should state the wing objectives in terms of the higher headquarters objectives, and the facility requirements needed to meet these objectives.

The major organizations on base should have their own mini-Facility Utilization Boards to prioritize requirements within their own areas of responsibility. For example, the Director of Operations, Chief of Maintenance, Group Commander, and Chief of Resources should each have their own mini-FUB.

Their requirements should be discussed with an individual from the Base Civil Engineer's Programming Section. In fact, **each major base organization should have an individual from the Programming Section assigned to assist them to research their facility requirements and to**

prepare the necessary paperwork. This will help to develop a sense of shared responsibility between the engineering advisor and the user. The engineering representative should help to validate requirements in simple terms such as square foot requirements and perhaps a very rough cost estimate.

Only those top four or five base facility projects should receive additional work to prevent loss of engineering time. Facility Working Groups should then meet to discuss objectives and the facilities requirements which help meet these objectives. The process would be time consuming the first year, however, in subsequent years the process would be less time consuming because the process would be evolutionary not revolutionary.

The mini-FUB solves several weaknesses in the present system. First, it forces major wing managers to review and set priorities on their own requirements. Second, it allows responsibility for setting priorities to be tied to an individual, and not to the system. Third, it gives the action officer who has been working a requirement "face time" with his boss. The action officer could receive recognition for a job well done or the responsibility for not being adequately prepared. This would be especially true if there were other action officers presenting other projects. In addition, the adversarial relationship between the Civil Engineering Programmers and the users would be eliminated.

The New Programming Phase:

The wing FUB is probably active at most bases, but very few have a listing of base objectives in priority order which can be used as a basis of prioritizing facility requirements. **Prioritized wing objectives would be a clear statement to the entire wing population of the importance the wing placed on its various requirements.** The wing commander could no longer have five priority one projects. He could not tell the Senior Enlisted Advisor that dorm improvement was one of his top goals and then rank it number five on his objectives list.

The long range facility construction plan (five year program) has lacked stability because a wing commander is only with the wing a relatively short time--usually less than two years. He is certain to be reassigned before the changes he makes to a long range program are felt by the wing. The possibility of extending the wing commander to benefit or suffer from his facility decisions is very unlikely. One way to help insure that his decisions are given the thought they deserve and still maintain execution authority at the base level is through a formalized review process (control) by the MAJCOM.

Headquarters TAC is already using the annual Military Construction Program review as an informal method of making recommendations which could improve a wing's plan.

The annual review needs to be taken a step further. Control could be in the form of an annual facilities briefing by the wing commander to his MAJCOM commander and by the Base Civil Engineer to the MAJCOM Civil Engineer. Wing objectives and the rationale for changes to the long range plan should be briefed. Such a requirement will help to insure changes are given appropriate thought and that the MAJCOM understands the basis for the changes.

Just as the bases are held responsible for prioritizing their facility construction program, the MAJCOM should also be held responsible for prioritizing the MAJCOM priority list to a greater degree than they are now. Some commands use a system which ranks the first priority of each base at the top of the MAJCOM listing and then the second priority from each base and so on. The problem with such a system is that priority two or three at base X may be more important to the command than priority one is at six other bases. Peters and Waterman in their book, In Search of Excellence, point out a problem with such an "analytical" approach:

A buried weakness in the analytic approach to business decision making is that people analyze what can be most readily analyzed, spend more time on it, and more or less ignore the rest. [3:44]

A procedure which requires the MAJCOM to make a decision as to which project is more important to the MAJCOM should be no harder than it was for the wing commander to

decide which project was more important to the wing. Such a procedure will take more work and discussion to develop as well it should.

The present system of developing a MAJCOM priority listing only warrants discussion at the point where the bogey does not permit funding. That is, if a project is in the "funded area" it makes little difference whether it is priority one or thirty-one. The importance of priority occurs when the bogey is reduced at a later date and priority thirty-one is no longer in the funded area (high enough on the priority list to be funded.) **A system is needed which requires the MAJCOM to take the responsibility to decide which projects are more important to the command and then to publish this list.** As it is now, the list are close hold and it is very unlikely that a MAJCOM's base is allowed to see how their projects rank with other base's projects. This allows a MAJCOM to avoid open discussion on the Command priority list.

To implement a more realistic approach to prioritizing projects, criteria need to be developed which weigh the need of one base against another for similar facilities. For example, TAC used the number of eligible airmen living off base to determine which base was to receive priority for dormitory construction. The resulting ranking was tempered by the ability of the community the base to support the housing needs.

Such a system would not take away the prerogative of the wing commander to decide what is most important for his base. What this system would do is to require the MAJCOM to decide what is the most important to the command. Who is more qualified to do this than the organization which has a chance to compare the situations at all the bases and to determine which has the greater need or which project will do the most to accomplish Air Force and MAJCOM objectives. Accompanying the authority and responsibility of setting priorities, is the responsibility for the MAJCOM to stand up and explain their decisions and to allow for discussion and dissent. When the discussion is over, only the list of priorities should be sent to the Air Staff--not the full documentation.

Moving up the command level, the Air Staff should have the responsibility of setting objectives and passing them to the MAJCOMs, establishing MAJCOM bogeys, and reviewing the line item priority listing of projects. The MAJCOM's rationale for the priority listing should accompany the listings and explain how the listing reflects the objectives set by the Air Staff or higher authority. The Air Staff would consolidate MAJCOM priority listings and submit them to OSD to be included in the DoD and finally the President's Budget.

The budget submitted to the Congress should only include a construction cost by MAJCOM. Construction for DoD

is about \$10.1 billion or three percent of the total military budget for 1988 and is not projected to increase dramatically in the near future. [8:42] Why then should the Congress spend so much of their time and the services time reviewing projects? The accusation has been that the laborious review is for the political attention which can be gained from criticizing the military or to insure construction funds are spent in certain Congressional districts. If, in fact, these are the reasons for the review, then there are other alternatives if Congress truly wants to reduce military cost.

One alternative would be for Congress to approve facility construction funds by broad categories within a service or MAJCOM. **A MAJCOM facility acquisition program could be broken down into areas depending on its contribution to the mission.** For example, one grouping could be **direct mission support** with such facilities as runways, fuel tanks, or munitions storage. A second grouping could be **mission support facilities** such as control towers, maintenance hangers or supply warehouses. A third grouping could be **other support facilities** such as squadron operations, transportation maintenance, or administrative facilities. The fourth grouping could be **quality of life facilities** such as dormitories, dining halls, or physical fitness centers.

Submitting four categories per command instead of one listing per command would still reduce the work load significantly at all levels of command and it may be more acceptable to Congress, especially if the groupings included the Air Force's objectives for the program. A prime result of doing business this way is that the Air Staff could return to what should be its primary mission--developing strategy and policy. Equally important, the Congress could return to its primary function--broad control of the budget process. The savings in manpower could be significant for both the Air Force and the Congress.

Congress has shown a desire to improve the acquisition system through a number of directed DoD reforms, and the President has shown his support with the appointment of the Packard Commission. However, if Congress is unwilling to reduce its project by project review of the military construction program for political reasons, MAJCOMS should still accept responsible for validating requirements and cost estimates and for assigning priorities based on overall MAJCOM and Air Force objectives.

For Congress to have the faith in the services to execute the facility acquisition process with less control, a better cost estimating system is needed which more accurately identifies what the costs and benefits of construction will be. Just as the Army is now doing and the

Air Force is starting to do, all facility cost estimates should include the cost of operating and maintaining a facility system throughout its life in addition to the cost of construction--lifecycle costing. The MAJCOM should be responsible for validating these cost estimates and the expected benefits.

The new civil engineering computer systems should be used to gather data to validate life cycle cost estimates using the same data that will already be stored on the base's computer system in the form of work accomplished on similar buildings. Both the Work Information Management System (WIMS) computer and the Energy Monitoring and Control System (EMCS) can and should be used to monitor the cost of operating, maintaining, and repairing a facility. Only the MAJCOMs can validate the need (control the process) or justification (benefit) the bases claim they will receive. This should not and cannot be done at the Air Staff. The individual at the MAJCOM who does validate the requirement should sign a document attesting to need which should be maintained on record. Again, the system would identify the individual responsible for the decision.

The New Execution Phase:

Execution of the authorized and appropriated construction programs should also be centered at the MAJCOM. This concept is now being tested at several bases and should be implemented Air Force wide as soon as possible. The test

includes eliminating the Regional Civil Engineer layer of management from the facility acquisition system. The MAJCOM deals directly with the Air Staff, the base, and the design/construction agent as the focal point of contact for the facility acquisition program. This is a major step in streamlining the system because it eliminates a function which has lengthened the execution process and diluted the communications between the base and the construction agent.

There is a second test which delegates the execution of construction down to base level. This is a mistake. The bases have a difficult time hiring trained and experienced engineers just to keep up with its present responsibilities. The salary system is not such that experienced engineers of the quantity needed could be hired to design or to monitor design. In addition, because the amount and type of construction fluctuates at each base from year to year, it would be impossible to maintain the proper balance of engineering disciplines. For example, one year the work could include major additions of parking aprons whereas the following year the projects might be to build a child care center and a wing headquarters which would require a variety of engineering disciplines.

One of the most valuable Packard Commission recommendations is to use "baselining." Baselining is similar to using milestones (significant points during the acquisition process), and holding an individual responsible

for meeting the dates set to complete each milestone. It is a contract to insure the dates are met. One important difference is that the responsible individual participates in the development of a baseline and is then given the authority to execute the plan without interference.

In the case of facility acquisition, it would be impossible to make one individual responsible for developing the requirement, obtaining the funds, designing the facility, and then building it. However, it is possible to breakdown the acquisition process into smaller parts and assign individuals responsibility for various phases of the process. For example, the user could assign a project officer to be responsible for developing a facility requirement and its justification to meet a specific time requirement. The project officer could also be responsible for defending the project through the base approval process.

Another individual in the Base Civil Engineering organization could be assigned as a liaison officer to the user's organization. The liaison officer would help the user to prepare the requirement and justification in the proper format for the programming documents. These appointments of project officer and liaison officer would give each a stake in insuring the success of a project.

At MAJCOM, an individual could be made responsible to review, validate and priortize all facility requirements

of a particular type, for instance direct mission support, mission support, or other support facilities. Another individual could be made responsible for determining what part of the MAJCOM facility construction bogey would be spent for facilities in each major type.

The Packard Commission also recommended the use of technology to reduce cost. **A significant step in reducing the overall cost of a facility could be realized through the use of life cycle costing to select among facility options.** Computers can be used to evaluate data already available at bases to validate life cycle cost estimates.

Computers should also be used in the design process to verify heating and cooling requirements for special use facilities such as Precision Measurement Equipment Labs. The present air conditioning technical requirements can be simulated on a computer to insure required conditions are met and to minimize oversizing and other unnecessary cost. Likewise, closer attention can be given to the design of facilities when computer programs are available to determine heating and cooling cost variations caused by window placement, number of windows, insulation thicknesses, amount of roof overhang and a variety of other passive design features.

Further, **computers can be used to simulate conditions which effect construction through a system called queuing theory.** The number of lanes needed for a road, the

number of spaces needed in a parking lot, the number of painters needed to paint buildings can all be determined by using queuing theory and computer simulation.

In addition, the Air Staff should insure that information on new construction products which can save money, are investigated and passed to bases through the computer system. Individuals from the Air Staff should visit construction trade shows to evaluate new construction materials and their possible application for military use. Those materials which show promise should be formally evaluated and recommended to the MAJCOMs for use in upcoming designs. Materials which have caused problems should also be evaluated and the MAJCOMs warned if they are substandard.

The use of "standard designs" can reduce cost and manpower requirements while improving facility quality. For example, the same interior design could be used for all services for dining halls of a similar size. The exterior facades of facilities could be changed to harmonize with the local base architecture. Given the lack of success of past attempts to work with the other services, there would probably be a better chance of instituting such a recommendation Air Force wide rather than in a tri-service environment.

Such a program would be an extension of the "definitive drawings" now available for use by all services which shows a typical floor plan for a variety of

facilities. There would be significant savings with the reuse of complete drawings and specifications which have proven to be good designs.

As a minimum, criteria or policy should be more clearly established to reduce what the Packard Report refers to as "gold plating." In facility acquisition, gold plating is easy to identify but hard to eliminate because the pressure at base level to be, or at least look, the best often overrides what is needed with what is wanted. The only buffer is the MAJCOM, which must stand up to its responsibility to eliminate gold plating during the design criteria or design review process. Such questions as how many offices a TAC fighter squadron facility requires should not be left to the judgments of a user who has never worked a facility requirement before or to a commander who may want to leave a personal memorial.

Criteria should be established by the MAJCOM for MAJCOM unique facilities and by the Air Staff for facilities common to all commands. There should never be a question as to the appropriateness of providing a break area with a bar for a flying squadron's functions if that is Air Force policy.

How will the no smoking policy impact facility design? How much space is needed in a facility for pallet buildup for deployment? These answers should be provided by the Air

Staff or MAJCOM and not be a point of debate on every project with a similar function.

Another good Packard Commission recommendation is to expand the use of commercial products. **Commercial specifications should be used in the design and construction of all facilities when ever possible.** The Packard Commission maintains that "DoD cannot duplicate the economies of scale possible in products serving a mass market, nor the power of the free market system to select and perpetuate the most innovative and efficient producers." It might be different if the military specifications resulted in a higher quality product or a cheaper cost to the government. An engineer in the Air Force would be hard pressed to convince a military housewife living on base who cannot wash dirty finger prints from her living room wall without removing the paint that the military paint specifications make the paint better than she could buy at at any hardware store.

The "quality" we strive to obtain through military specifications can just as easily be described by specifying a Sears paint with the exact color we want or three companies' paints from which the contractor could choose the paint he could get at the best price. Which three paints to be specified would depend on the past performance of the paints, and this information could also be kept in the base computer system.

The increased use of competition is another proven method to reduce cost supported by the Packard Commission. One of the most important ways to increase competition in facility acquisition has already been discussed--use commercial specifications. In 1976, the Air Force commissioned two architectural-engineering firms to determine why military housing cost more than civilian housing, even though military housing was usually built in larger quantities. Both firms reported that contractors maintained that they did not want to get involved with the complicated process, voluminous specifications, and an unreasonable number of inspections.

The Packard Commission recommends that "Federal law and DoD regulations provide for substantially increased use of commercial-style competition, emphasizing quality and established performance as well as price." An excellent suggestion which the 1976 housing study also supports. The study found that many contractors were deterred from bidding because unqualified bidders would bid low on projects and then hope to earn their profits through cost changes. By "prequalifying" bidders or using a selection system other than just cost, many unscrupulous bidders would be eliminated, past good performance by a contractor could be rewarded, and more reputable contractors would bid on military projects. The "negotiated contract" referenced in the Packard Commission report could be a boon to facility

construction if the cost thresholds were not too low. The computer systems of the design agents could be used to keep the performance statistics on construction contractors throughout an area or even throughout the United States.

Another recommendation to increase competition which is not in the Packard Commission Report may not be very popular with the Congress. This recommendation is to **eliminate the small business set-aside program.** This program requires that a certain percentage of military construction be awarded to small businesses. These contractors are chosen by the Small Business Agency and the price of a project is negotiated with the small business by the Small Business Agency rather than awarded to the lowest qualified bidder. The program was developed to give small and "disadvantaged" contractors an opportunity to grow. In the experience of the author, the result of the program has been to delay the completion of almost every project awarded in this manner or for the Base Contracting Officer and Base Engineer to experience a frustrating period of construction which usually resulted in accepting a less than acceptable facility and almost always late. A case in point is a Commissary project awarded to a small business concern which is now well past a year late in being finished. During construction, the contractor constructed concrete walls longer than specified and had to cut them off and had four different supervisors which were fired at the request of the

contracting officer to mention a few of the problems encountered.

Another possible way to improve competition would be to **allow each base to develop a bidding strategy**. For example, the time of year, how busy the construction industry is in an area at a particular time will effect how many firms bid on a project and how high their bids are. A myriad of other factors, such as the interest rate on construction loans when bids are to be opened, also affect bidding. The construction agent should be given the flexibility to develop a bidding strategy rather than to rush into the contracting process without a degree of flexibility. The bidding strategy should be agreed to by the base, the MAJCOM and the construction agent.

The final recommendation to improve the execution phase of facility acquisition construction is to **improve the quality of acquisition personnel**. This recommendation is also one encouraged by the Packard Commission and as General Welch was quoted to say at the beginning of this chapter, execution has a much greater impact on productivity than does quality of management decisions. In other words, **people make the difference**. Their training, their experience, and their motivation make a decision or a system work. The Packard Commission made the point that the people who execute the acquisition programs are under-trained, underpaid, and inexperienced compared to their counterparts

in industry. Although these comments were directed at weapon systems acquisition, the same is true for those involved in facility acquisition. These people are the engineers who program the projects and participate in the design at base, MAJCOM, and Air Staff levels as well as the design, contracting, and construction engineers at the Corps of Engineering and Naval Facilities Command.

The chance of obtaining any significant increase in pay for these numerous positions is probably fairly remote and probably not the primary solution. To compensate for lower pay, a concerted effort must be made to provide other incentives. Incentives such as additional training, a pleasant workplace with all the tools needed to do their jobs (such as computers), recognition and job satisfaction, and the appropriate administrative staff would help to make up for lower pay.

The biggest incentive for people who operate the facility acquisition system would be to reduce their frustration level. This could be done by reducing and consolidating the many laws, regulations, and controls which cause unnecessary complications in the acquisition process. For example, why submit status reports except when there is a deviation from an agreed upon baseline plan (management by exception). In addition, progress data could be kept on the computer, and higher headquarters could access information as required. What is needed is to delegate execution and

execution and allow the experts to do their jobs in a way that job satisfaction is more important than their lower pay and higher workload. Above all, give authority and responsibility to each level in the acquisition process and hold them accountable to meet baseline contracts. Good performance needs to be rewarded if good workers are to be motivated to continue doing good work and poor workers to perform better.

CHAPTER IV

CONCLUSIONS

There are a variety of reasons the facility acquisition process must be reformed. The reduction of officers in the military and the impact of the Gramm-Rudmann Act will reduce the number of managers while increasing the need to manage. The rising cost of operational and direct support facilities will reduce the funds available to meet the higher expectations of the military population for better working and living conditions. Finally, two of the most compelling reasons for facility acquisition reform are the obligation of the military to spend tax-payers' money as efficiently and effectively as possible and, at the same time, to provide for the defense of this nation.

The Chairman of the Joint Chiefs of Staff said that "...the most important way technology could enhance military capability would be to cut the acquisition cycle in half." [1:35] The Packard Commission agrees this is an important objective, but they feel it cannot be done with technology alone.

"It requires a radical departure from our current organization and procedures. ...a new willingness to change among acquisition professionals...(and that)...government and industry repair their vital partnership. More importantly, it presumes a special cooperation between Congress and the Executive to act for substantial improvements of the acquisition system."

Even though both of these quotes refer to fielding a weapons system and it is doubtful that the facility acquisition

process could be cut in half, there are reforms which can significantly reduce the time, effort, and cost of facilities, while quality improves. Each of the participants in the acquisition process from the user to the Congress and from the contracting office to the contractor can contribute to shorter acquisition cycles, less expensive, and better constructed facilities.

There are better ways to manage the facility acquisition job and the better ways are certain to save money and time and to improve job satisfaction. The present system is too complex and must be simplified. Execution must be pushed down to the lowest possible level where the person who has the most to gain (or lose) has the authority to get on with the work. "He" must be responsible and held responsible for the outcome while "they" go on controlling the "big picture".

The system control must still be maintained at the appropriate level where the big picture is available but not so high a level that the picture is misunderstood. This appropriate level is the major command where the needs and the resources must come together. The major command must be the organization which decides what is best for the command--which projects will be funded and in what order. At the lowest level, it is still necessary to hold the wing commander responsible for deciding what needs to be done at his base and in what order. On the other hand, when

projects of various wings compete for limited funds, it should be the major command which decides which projects within the command are most needed to support the mission.

The facility acquisition system will not be improved by more rules and restriction. Only better management systems leading to more productivity will provide the solution. Just as we need more "bang for the buck" in weapons systems acquisition, **we must have "more bricks for the buck" in facility acquisition. This can be done by putting the responsibility for brick laying back to the masons and out of the hands of the bean counters.**

APPENDIX 1
FACILITY ACQUISITION AND
THE MILITARY CONSTRUCTION PROCESS

<u>STEP</u>	<u>WHEN</u>	<u>WHO</u>	<u>WHAT</u>
BEGIN PLANNING PHASE			
1.	-June Yr 1	User	Determine Requirement.
2.	-June Yr 1	User's Supervisor	Review, Concur and submit to Base CE.
3.	-June Yr 1	Civil Engineer (CE)	Validate and submit to Wing Facilities Working Group
4.	June Yr 1	Fac Working Group	Develop integrated Wing Priority List Strawman & submit to Wing Fac Utilization Board
5.	July Yr 1	Fac Util Board	Review and Approve 5 Year Construction Plan
END PLANNING PHASE			
BEGIN PROGRAMMING PHASE			
6.	Dec Yr 1	Civil Engineer	Prepare and submit draft project documents to MAJCOM
7.	-Feb Yr 1	MAJCOM CE	Technical and Cost Review. Sends copy to user's counterpart on staff
8.	Feb Yr 1	MAJCOM User's Counterpart	Functional Review...Send comments to MAJCOM CE
9.	Feb Yr 1	MAJCOM CE	Reviews projects and Long Range Plan with each Base
10.	May Yr 1	Civil Engineer	Modifies project documents to agree with MAJCOM review and submits to MAJCOM
11.	Jun Yr 1	MAJCOM	Prioritizes MAJCOM MCP listing and sends project documents to Air Staff
12.	Jun Yr 1	Air Staff CE	Technical, Cost, and Justification Review. Sends documents to User's counterpart

13. Aug Yr 1	Air Staff User's Counterpart	Functional review and comparison with other similar projects
14. Aug Yr 1	Air Staff	Reviews projects with each MAJCOM
BEGIN EXECUTION PHASE		
15.-Aug Yr 1	Air Staff CE	Issues Design Directive to Design Agent for validated projects Submits projects to Sec AF
16. Jul Yr 2	Sec AF	Submits projects in AF budget to OSD
17. Sep Yr 2	OSD	Reviews project status. If 75% complete, includes project cost in President's Budget
18. Jan Yr 3	President	President submits Budget to Congress
19. Apr Yr 3	Congress	Review by <u>any</u> interested committee.
20. May Yr 3	Congress	Senate and House Authori- zation Committees review and authorize project. Disputes settled in Conference Committee.
21. Jul Yr 3	Congress	Senate and House Approp- riation Committees review and appropriate project. Disputes settled in Conference Committee.
22. Sep Yr 3	Congress	Sends Military Construction Bill to President for signature.
23. Sep Yr 3	President	Signs Bill making it Law.
PROGRAMMING PHASE ENDS		
24. Oct Yr 3	Air Staff	Authorizes Construction Agent to bid project
25. Feb Yr 4	Construction Agent	Advertises and awards project. Inspects project

		during construction.
26.	Feb Yr 4 Base CE	Monitors project during construction and inspects project when completed.
	Feb Yr 5	Accepts facility on behalf of Air Force
27.	Feb Yr 5 User	Takes occupancy of facility
	EXECUTION PHASE ENDS	

APPENDIX 2
A NEW FACILITY ACQUISITION AND
MILITARY CONSTRUCTION PROCESS

<u>STEP</u>	<u>WHEN</u>	<u>WHO</u>	<u>WHAT</u>
BEGIN PLANNING PHASE			
1.	Sep Yr 1	Air Staff CE	Set AF Facility Objectives. Send Objectives to MAJCOMs.
2.	Oct Yr 1	Air Staff CE	Set MAJCOM funding bogeys by catagory.
3.	Oct Yr 1	Base CE	Appoint Engineering Liaison Officer to each major Base Unit.
4.	Oct Yr 1	Base User	Assign Facility Project Officer and determine requirements.
5.	Dec Yr 1	MAJCOM CE	Set Base Facility Bogey and MAJCOM facility objectives.
6.	Mar Yr 1	Major User	Hold mini-FUB to set unit priorities. Cmdr signs document. Send to Base CE.
7.	May Yr 1	Base CE	Consolidate units' requests and develop Wing strawman list for FWG.
8.	Jun Yr 1	FWG	Review 5 year plan and integrate new requirements. Rationale for any changes to be included. Vice Wing Cmdr to sign. Submit to FUB
9.	Jul Yr 1	FUB	Review proposed changes to 5 year plan and approve. Wg Cmdr to sign.
END PLANNING PHASE			
BEGIN PROGRAMMING PHASE			
10.	Oct Yr 2	Base CE	Prepare Life Cycle Cost Analysis for current year facility project require- ments ...submit to MAJCOM CE.

11. Oct Yr 2 MAJCOM CE Distribute project documents to user's MAJCOM counterparts.
12. Dec Yr 2 Base CE Brief 5 yr Program to MAJCOM CE.
13. Dec Yr 2 Wing Cmdr Brief 5 yr Program to MAJCOM Cmdr.
14. Dec Yr 2 User's MAJCOM counter-part Prioritize all facility projects within area of responsibility.
15. Feb Yr 2 MAJCOM FWG Develop strawman priority listing by facility type. Send to wings for information.
16. Mar Yr 2 MAJCOM FUB Review and approve projects within facility type.
17. Apr Yr 2 MAJCOM CE Send priority project list to Air Staff CE.

BEGIN EXECUTION PHASE

18. May Yr 2 Air Staff CE Approve projects by MAJCOM for design.
19. May Yr 2 Army/Navy Design Agent Hire design firm and begin design
20. Jun Yr 2 Air Staff CE Send facility funding requirement by type to OSD.
21. Sep Yr 2 MAJCOM Reviews project status. If 75% complete, notifies Air Staff/OSD to include in President's Budget.
22. Jan Yr 3 President President submits Budget to Congress
23. Mar Yr 3 Air Staff CE Brief AF facility objectives to Congress (MILCON Committee.)
24. Aug Yr 3 Contracting Agent Advertise projects based on Congressional approval.
25. Sep Yr 3 Congress Authorizes and Appropriates MCP.

- | | | | |
|-------------------------------|----------|--------------------|---|
| 26. | Sep Yr 3 | Congress | Sends Military Construction Bill to President for signature. |
| 27. | Sep Yr 3 | President | Signs Bill making it Law. |
| PROGRAMMING PHASE ENDS | | | |
| 28. | Oct Yr 4 | Air Staff | Authorizes Construction Agent to award projects. |
| 29. | Oct Yr 4 | Construction Agent | Awards projects. Inspects during construction. |
| 30. | Oct Yr 4 | Base CE | Monitors project during construction and inspects project when completed. |
| | Sep Yr 4 | | Accepts facility on behalf of Air Force |
| 31. | Sep Yr 4 | User | Takes occupancy of facility |
| EXECUTION PHASE ENDS | | | |

APPENDIX 3
MEMBERS OF THE PACKARD COMMISSION

PRESIDENT'S BLUE RIBBON COMMISSION
ON DEFENSE MANAGEMENT

Staff

Rhett B. Dawson, Director
Paul S. Stevens, Deputy Director and General Counsel
Robin Deck, Counselor for Legislative Affairs
David J. Berteau, Executive Secretary
Peter R. O'Connor Administrative Deputy

Professional and Technical Staff

Richard C. Morris	Phillip L. Harrington
James G. Ling	James J. Lindenfelser
Robert Steve Dotson	John T. Kavanaugh
Jeffery P. Metzger	Thomas E. Reinkober
Andrew Hamilton	Robert T. Marlow
Shauna D. Russell	Toney Stricklin
Rebecca D. Paulk	Michelle S. Kalkowski
Mary F. Nugent	Jeanne Briguglio
Kenneth J. Krieg	Donna M. Rivelli

Senior Consultants

John C. Beckett
Jacques S. Gansler
Vincent Puritano

Public Affairs

Herbert E. Heatu, Counselor
Alexis B. Allen

Technical Advisers to the Acquisition Task Force

E. Oran Brigham	Walter M. Locke
Dale W. Church	Bill B. May
Paul G. Kaminski	Barry H. Whelan

APPENDIX 4
MEMBERS OF THE ACQUISITION TASK FORCE

Director:

William J. Perry

Members:

David Packard
Louis W. Cabot
Charles J. Pilliod, Jr
James Woolsey
Ernest C. Arbuckle (deceased)

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GLOSSARY

AFRCE	Air Force Regional Civil Engineer
BOS	Base Operating Support
CE	Civil Engineer
DOD	Department of Defense
EMCS	Energy Monitoring and Control System
FUB	Facilities Utilization Board
FWG	Facilities Working Group
HEADQUARTERS TAC	Headquarters, Tactical Air Command
MAJCOM	Major Command
MCP	Military Construction Program
OSD	Office of the Secretary of Defense
SEC AF	Secretary of the Air Force
WIMS	Work Information Management System

END
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